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# INTERNATIONAL HARVESTER

TRADE MARK

## CATALOGUES

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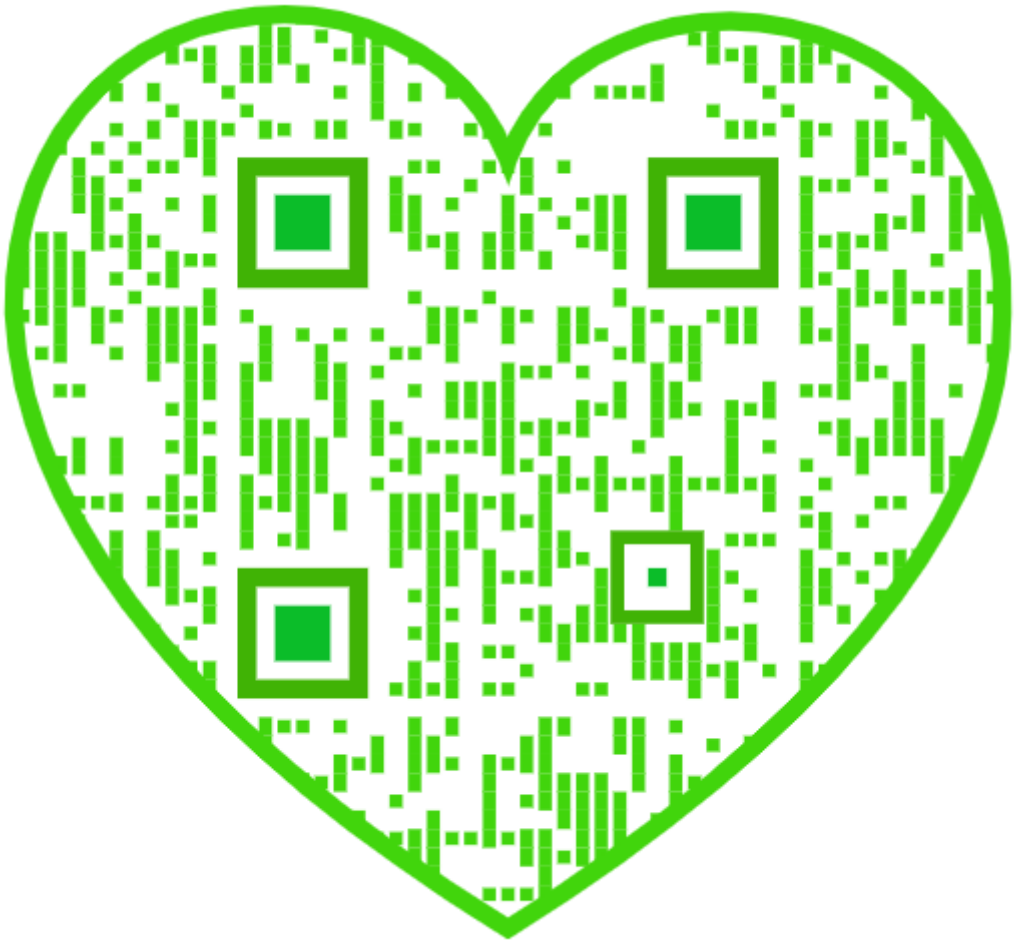


INTERNATIONAL
HARV ESTER

# DEERING

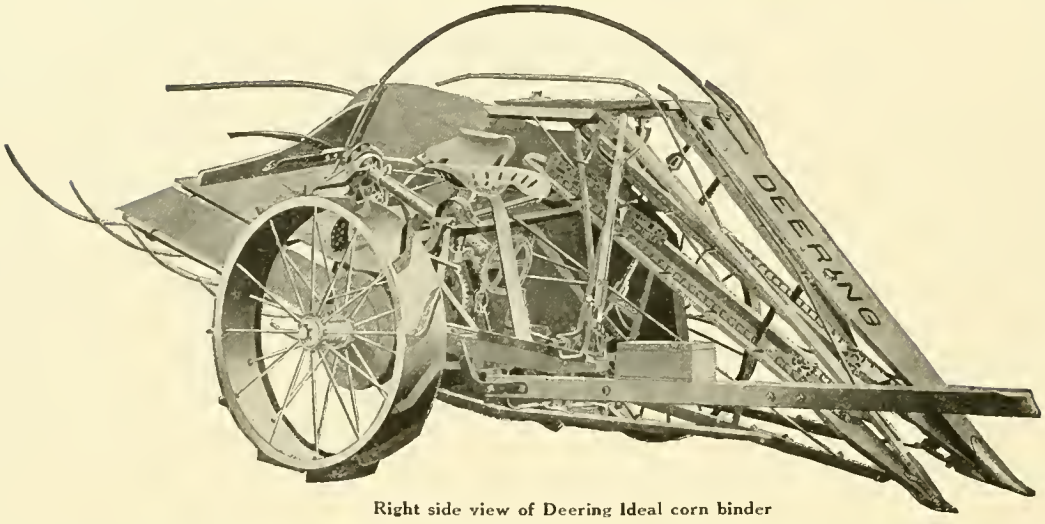
## CORN MACHINES

# DEERING

## IDEAL CORN BINDER
## 2-ROLL HUSKER AND SHREDDER
## 4-ROLL HUSKER AND SHREDDER
## 6-ROLL HUSKER AND SHREDDER
## No. 3 CORN PICKER

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)
CHICAGO U S A

# Deering Ideal Corn Binder




Right side view of Deering Ideal corn binder

The Deering Ideal corn binder has the same relation to corn that the grain binder has to wheat and oats. The standing corn, like the grain, is cut, bound and discharged as fast as the horses walk. Like the grain binder, it makes a big saving possible, not only in manual labor, but also in the number of hands required and wages and board for extra men. At the same time, the corn binder does from five to eight times as much work per day under average conditions as a man would do. Tall and short corn is handled with equal ease.

It can easily be figured out how a corn binder can pay for itself in a short time under such favorable conditions. When a corn grower becomes acquainted with the merits of the Deering corn binder, he would not be without one, as its great superiority over the old hand methods becomes only too plain under actual observation in the field.

The corn binder will be found of special advantage when the green corn is to be cut for immediate feeding to stock, or put through the silo filler, as a large area can be cut quickly to conserve the plant juices when the corn is in just the right condition to cut for these purposes.

**Main Frame**—The main frame is of angle steel, firmly bolted and braced, and has been designed to withstand successfully the heavy and sudden strains to which it is constantly subjected when in operation. At the same time, it is comparatively light. It cannot warp or twist.

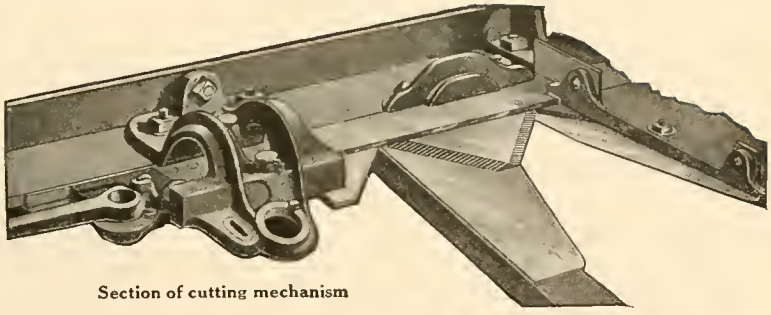
**Main and Grain Wheel**—The main wheel has a diameter of 37 inches. The tire has a width of 9 inches. The center depression in the tire keeps the wheels from twisting. The grain wheel has the same diameter as the main wheel, but the tire is smooth and has a width of 3½ inches. The spokes on both wheels are set staggered, and the main wheel is heavily lugged to increase traction.

**Main Drive Gear**—The main drive gear is attached to the main wheel and binder frame and is enclosed in a cast frame which forms a perfect protection for the gears. By placing the gears at this point it is not necessary to use chain belting, which easily becomes tangled and accumulates mud which goes into the gears and impairs their serviceability. The gears are kept in perfect mesh at all times during operation.

**Roller and Ball Bearings**—Roller bearings are used on both sides of the main and grain wheels, at the upper end of the crank shaft and on the drive shaft for the inner gatherer. Ball bearings are used at the top of the crank shaft driving pinion. The Deering corn binder runs much lighter than is generally supposed for a machine of this kind.

# Deering Ideal Corn Binder

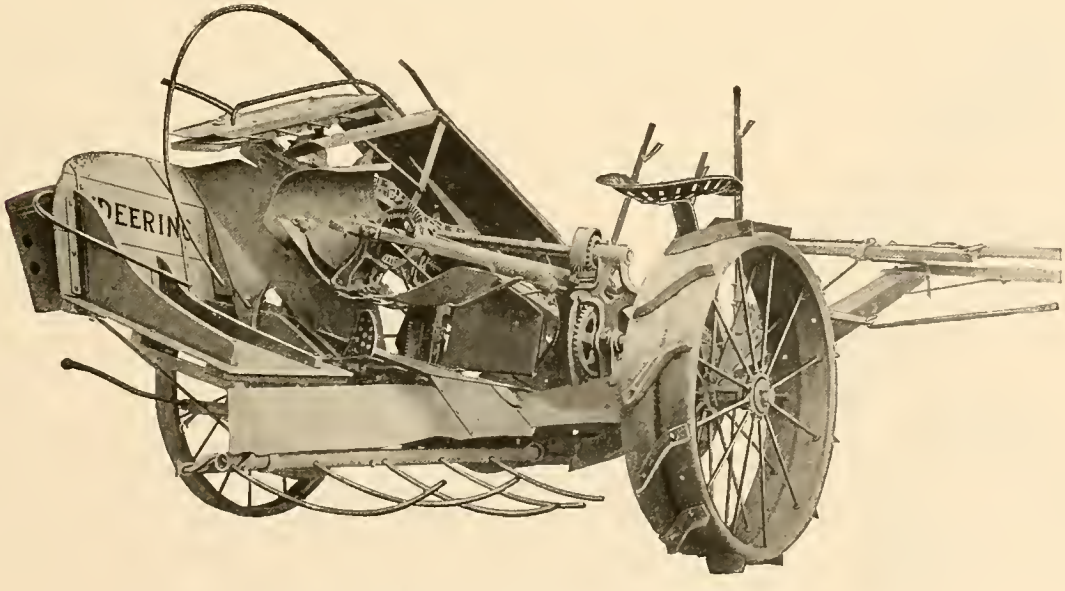
**Cutting Device**—The cutting mechanism on the Deering corn binder consists of a reciprocating and two stationary knives. The stationary knives are placed at an angle so that the majority of the stalks are cut before reaching the oscillating section. The large reciprocating section cuts the stalks that are not completely cut by the stationary knives, and also cuts all tough weeds, vines, or green undergrowth between the hills.



Section of cutting mechanism

**Gatherers and Binder Mechanism**—The shoes at the lower end of the gatherers are 20 to 22 inches apart which allows the standing corn to pass cleanly into the machine as it moves forward. Chains and fingers straighten up the stalks and hold them in position for cutting. After the stalks have been cut they are guided to the proper position for binding by steel guide rods. When a sufficient number of stalks have accumulated on the binder deck they are bound into a bundle, the operation being similar to that of a sheaf of grain being bound on the grain binder. The compression of a small trip lever starts the action of the three discharge arms, which force the bundles to the bundle carrier.

**Large Range of Handy Levers**—The binder shifter lever, the tilting lever, and the butt adjuster lever are placed close to the driver's seat and within easy reach. The binder shifter lever has an actual adjusting range of 21 inches, 8 inches of which are of the shifting device itself, while 13 more are obtained by the aid of the butt adjuster. The bands can, therefore, be placed around the middle of long or short corn equally well. The tilting lever has an actual tilting range of 14 inches which insures gathering all the down corn and permits the gatherers to be raised above the ground when transporting the machine.



Rear view of Deering Ideal corn binder showing bundle carrier

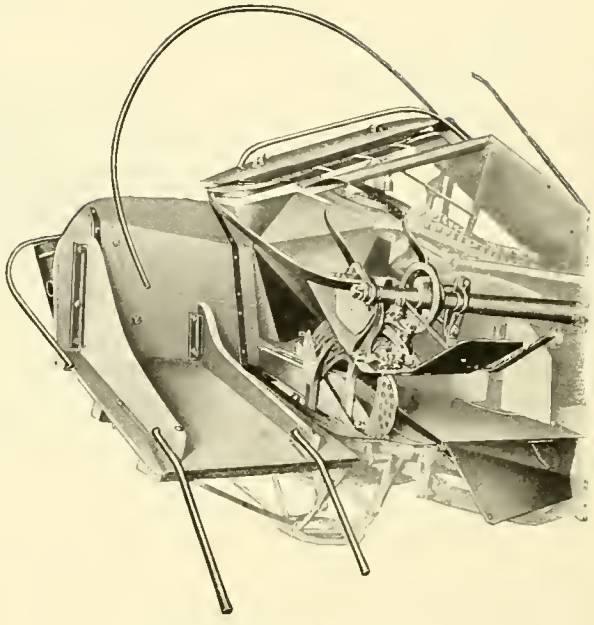
# Deering Ideal Corn Binder

**Bundle Carrier**—The bundle carrier is of large capacity, strongly and substantially built, and correctly located. It is tripped by means of a small foot lever convenient to the operator. The bundles are deposited at the right side and rear of the binder, parallel to the row. Two discharge rods, as shown in the illustration, are furnished on order when the bundle carrier is omitted.

**Perfect Balance**—The tongue is attached to the main frame, as shown in the illustration, to equalize the draft. There is practically no weight on the horses' necks.

**Oiling Facilities**—Oiling is easy on Deering corn binders. Oil holes are protected from dirt and grit. Three vertical gear shafts are provided with spring lid oilers.

**Power Distribution**—The power is distributed direct from the main enclosed gear of the main wheel to the knife, to the gatherer chains, and to the binding mechanism. This eliminates undue strain, lightens the draft and makes a practically positive drive. The entire mechanism is set in motion the instant the main wheel starts.



Showing guide rods, three discharge arms, binder deck, two packers and trip hook, and discharge rods used when bundle carrier is taken off

**Self-Aligning Boxes**—All boxes on the Deering corn binder are self-aligning. Brackets which support the boxes in their proper position prevent the shafts from being sprung or bent.

**A Clean Stubble**—The Deering corn binder leaves a clean, even stubble. The binder is of proper width so that neither the main wheel nor the grain wheel run on the rows of stubble.

**Adjustable Binding Attachment**—The binding attachment can be adjusted forward or backward, the same as on the grain binder.

**Evener**—A 3-horse evener is regularly furnished with each machine.

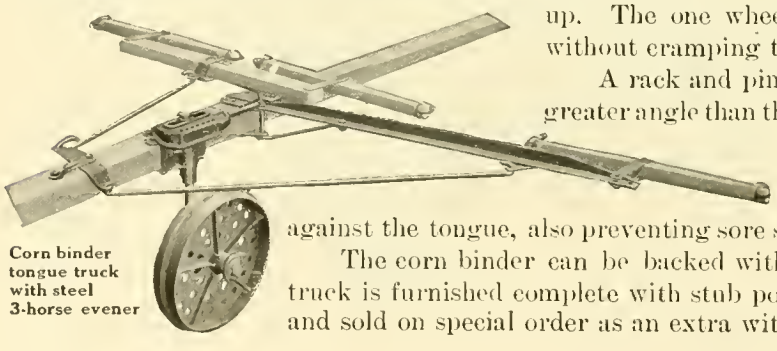
**Tongue Truck**—The Deering corn binder tongue truck prevents the tongue from lashing the sides of the horses, relieves them of neck weight, and aids the machine materially in running smoothly.

It is made with one wheel, the great advantage of which is that when cutting down corn, particularly that which leans toward the pole, there is no wheel on the inner side to run over the corn and prevent the gatherer point from picking it up.

Another advantage is that, when turning corners, the truck does not have a tendency to tip up. The one wheel turns smoothly and effectively without cramping the truck.

A rack and pinion operate to turn the wheel at a greater angle than the tongue. This gives the horses the opportunity of pulling the corn binder around square at corners without having to crowd hard against the tongue, also preventing sore shoulders and necks on the horses.

The corn binder can be backed with this tongue truck. The tongue truck is furnished complete with stub pole, forward pole and doubletrees, and sold on special order as an extra with the Deering corn binder.



Corn binder tongue truck with steel 3-horse evener

# Deering Corn Binder Elevator

The Deering corn binder can be furnished with a bundle elevator. The purpose of this elevator is to elevate the bundles direct from the binding attachment to a proper height so that they can be dropped onto a wagon running parallel with the corn binder, and directly under the upper end of the elevator. It is ideal to use when corn is cut for the silo, or when cutting green corn for immediate stock feeding purposes. It has many advantages.

**First** — The elevator saves extra handling and extra help. Every farmer quickly realizes the value of this point. The labor of pitching the bundles into the wagon is eliminated. This is hard work, especially on hot or sultry days.

**Second** — The elevator saves the wages of two men and one team, according to one farmer's testimony. Figuring the wages of two men, the use of one team, meals for men and horses, and the additional time it would take these men to finish the job as compared with the corn binder with elevator attachment, the farmer is put to a daily expense of from $5 to $8. When the elevator is used this amount goes into the farmer's pocket.

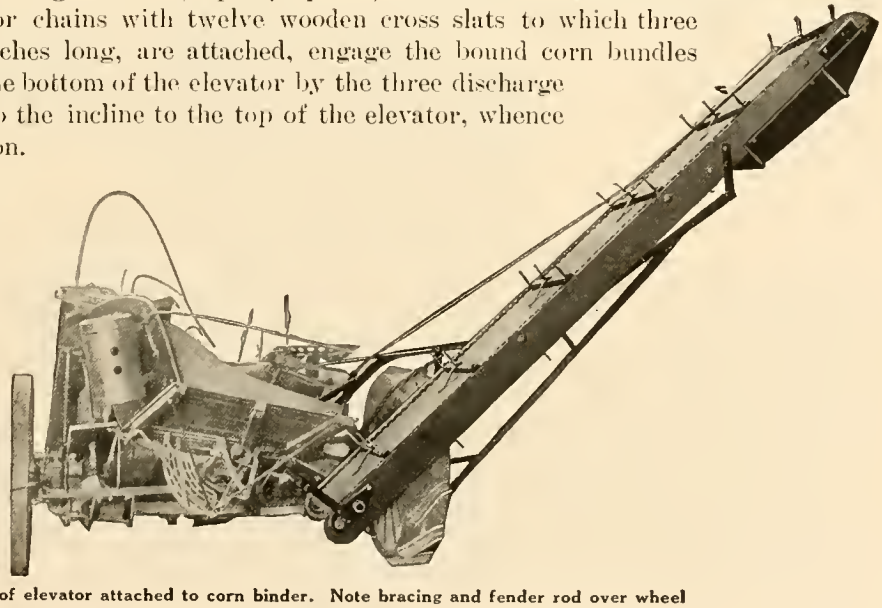
**Third** — The corn is moved quicker. There is no chance for it to dry and lose its succulence before it is put through the silo filler.

**Fourth** — The elevator requires very little power to operate, in fact, it requires practically no more power than a bundle carrier holding three or four bundles.

**Fifth** — The elevator extends out and up high enough so that a hay rack or any ordinary wagon of any height can run parallel with the corn binder under the elevator, without danger of coming in contact with the machine. A big load can be taken on without interfering with the elevator. The upper end of the elevator is over ten feet from the ground.

**Sixth** — A valuable feature of this elevator is that the bundles are lifted in the same position that they are bound. The bundles are not dropped from the top of the elevator with the butts or heads first, which makes them very awkward to handle, but are dropped in a horizontal position so that the man on the wagon can easily receive them in his arms as they fall without the necessity of dodging or danger of being knocked down.

**Construction** — The elevator is 11 feet, 2 inches long and 31 inches wide. The side boards are 5¾ inches high. Five light boards, equally spaced, constitute the bottom of the elevator. Two conveyor chains with twelve wooden cross slats to which three metal fingers, each 4 inches long, are attached, engage the bound corn bundles as they are thrown to the bottom of the elevator by the three discharge arms, and carry them up the incline to the top of the elevator, whence they drop onto the wagon.



**This elevator is furnished on special order as an extra**

**Rear view of elevator attached to corn binder. Note bracing and fender rod over wheel**

# Deering 2 and 4-Roll Huskers and Shredders

The demand for huskers and shredders is growing with every year. The farmer has found the true value of corn fodder, and he is now putting it into the silo, feeding it green to his stock, baling it for the market, blowing it into the mow for winter feeding, and using it as an absorbent bedding for his cattle.

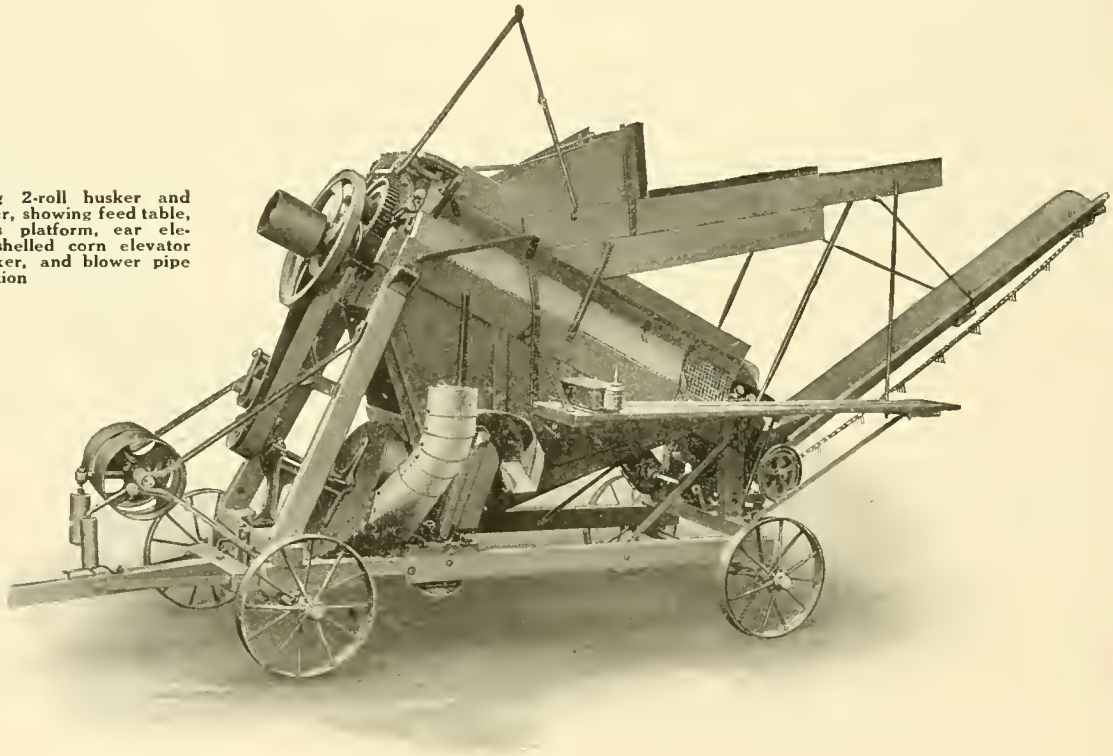
**Points of Difference between 2 and 4-Roll Shredders**—Deering 2 and 4-roll huskers and shredders are the same in general construction, except that the 4-roll has larger dimensions—the 4-roll machine having a wider and heavier frame, a heavier fly-wheel, and three bearings on the shredder shaft where the 2-roll only has two.

The 2 and 4-roll shredders are built chiefly for individual use. The 4-roll, however, is large enough to be used together by such groups of farmers as wish to co-operate with each other in shredding their corn without the necessity of buying individual machines or having to rely on the custom shredderman. Both the 2 and 4-roll shredders are hand-feed machines.

**Frames and Trucks**—The frames on the Deering 2 and 4-roll shredders are so strongly put together of selected and well-seasoned lumber, and are so well braced, that there is no possibility of warping or twisting even under the most severe strains. This means that all bearings are held in perfect alignment at all times, insuring longer wear and lighter running machines. The trucks are strong and easily support the weight of the shredders. The wheels on the 4-roll have a diameter of 26 inches, and tires 3½ inches wide. On the 2-roll the wheels are 20 inches in diameter and 2½ inches wide.

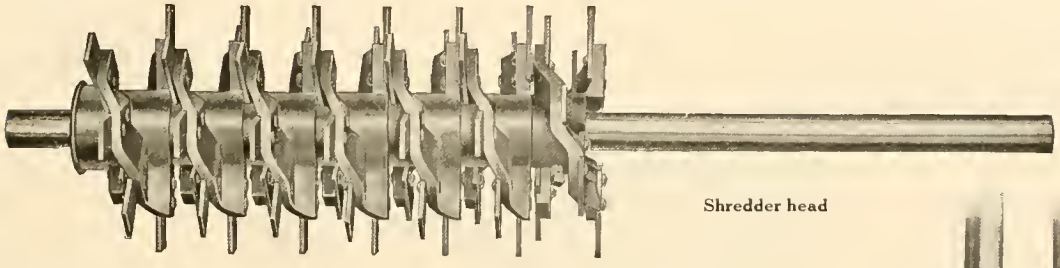
**Footboard and Feeding Table**—The location of the feeder's stand makes it easy to pass the corn into the feed opening and snapping and husking rolls. The position of the feed table and footboard can be changed to suit the feeder. The feed table is large, so that the bundles can be thrown onto it from the wagon.

**Safety Lever**—The safety lever is located near the feeder, and immediately in front of the feed opening. By means of this lever the operator can quickly stop the rolls should any hard substance slip into the shredder with the corn as it is fed. It responds to the touch immediately. Breakage and wrenching of parts is prevented almost absolutely by this means. Should the operator slip and fall against the device, the rolls will stop automatically.



**Deering 2-roll husker and shredder, showing feed table, feeder's platform, ear elevator, shelled corn elevator or sacker, and blower pipe connection**

# Deering 2 and 4-Roll Huskers and Shredders

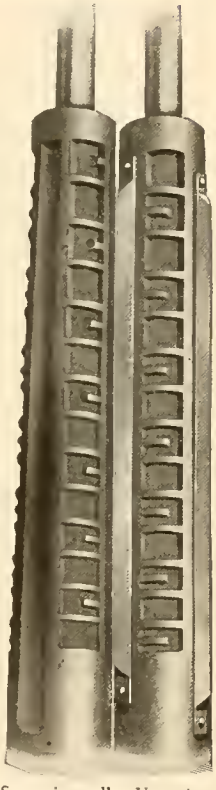


Shredder head

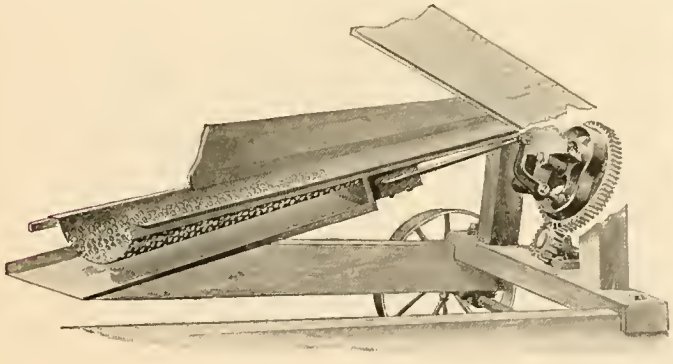
**Snapping and Husking Rolls**—The snapping and husking rolls are one and the same. As the corn is fed into the shredder the stalks are at once seized by the upper part of the rolls, which snap the ears and pass the stalks through to the shredder head. The ears, by force of gravity, pass on to the lower part of the rolls, which do the husking. The ear retarders keep the ears parallel with the rolls to produce the best results. The snapping part of the rolls have alternating ribs, while the husking rolls are alternately grooved and plain with husking pins at regular intervals, which aid in the process of separating the husks from the ears. The rolls taper, being 4 inches in diameter at the lower, and 3¼ inches at the upper end. They are 5 feet, 5 inches long. They are equipped with roller bearings to minimize friction.

**Shredder Head**—The construction of the shredder head can be seen by referring to the illustration at the top of the page. It works satisfactorily in all conditions of corn, and does not powder the leaves. No two of the shredder plates are set in line. There are no knives to keep sharp, and there is no winding. The shredder heads on the 2 and 4-roll are the same, except that the shaft on the 4-roll is longer.

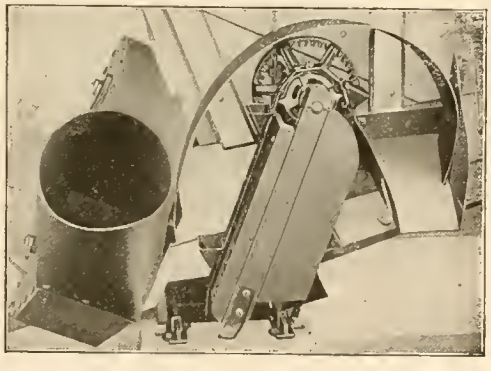
**Shelled-Corn Sieve**—The shredded fodder as it comes from the shredder head falls upon the reciprocating screen or sieve. This sieve has a constant oscillating motion to sift out any shelled corn which might be in the fodder. The shelled corn is forced through by the rapidly revolving and powerful beater into a fine screen sieve. This in turn sifts out grit, sand, etc., which falls through to the ground, while the shelled corn passes into the shelled-corn elevator. It is then carried to a sack hung on the end of the elevator spout at the side of the machine. The shredded fodder is forced through the blower pipe by the blast from the heavy one-piece fan to the stack or into the mow.



Snapping rolls. Note the V-shaped ridges on one roll which fit into the corresponding grooves on the opposite roll. There are 3 ridges and 3 grooves. A positive grip is thus secured as the rolls work toward each other

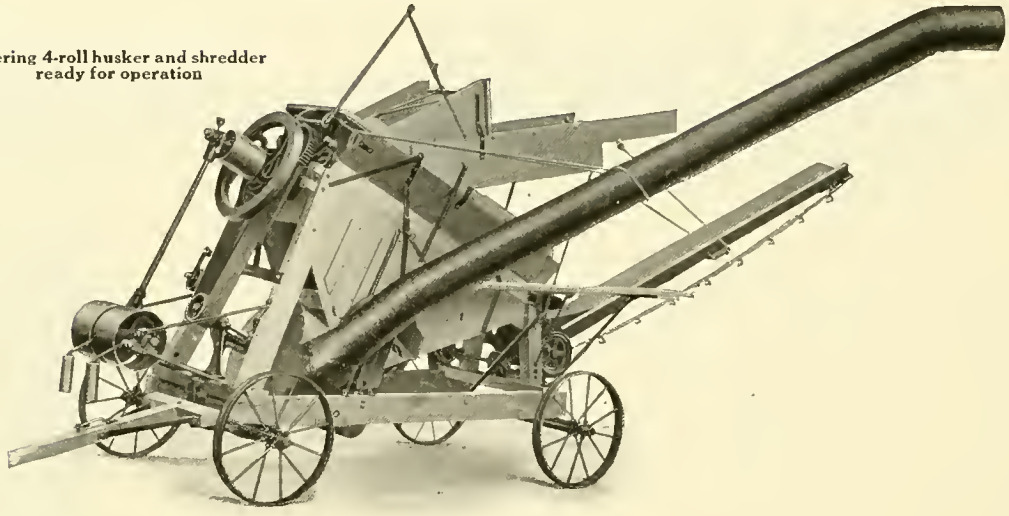


Sieve separator for shelled corn

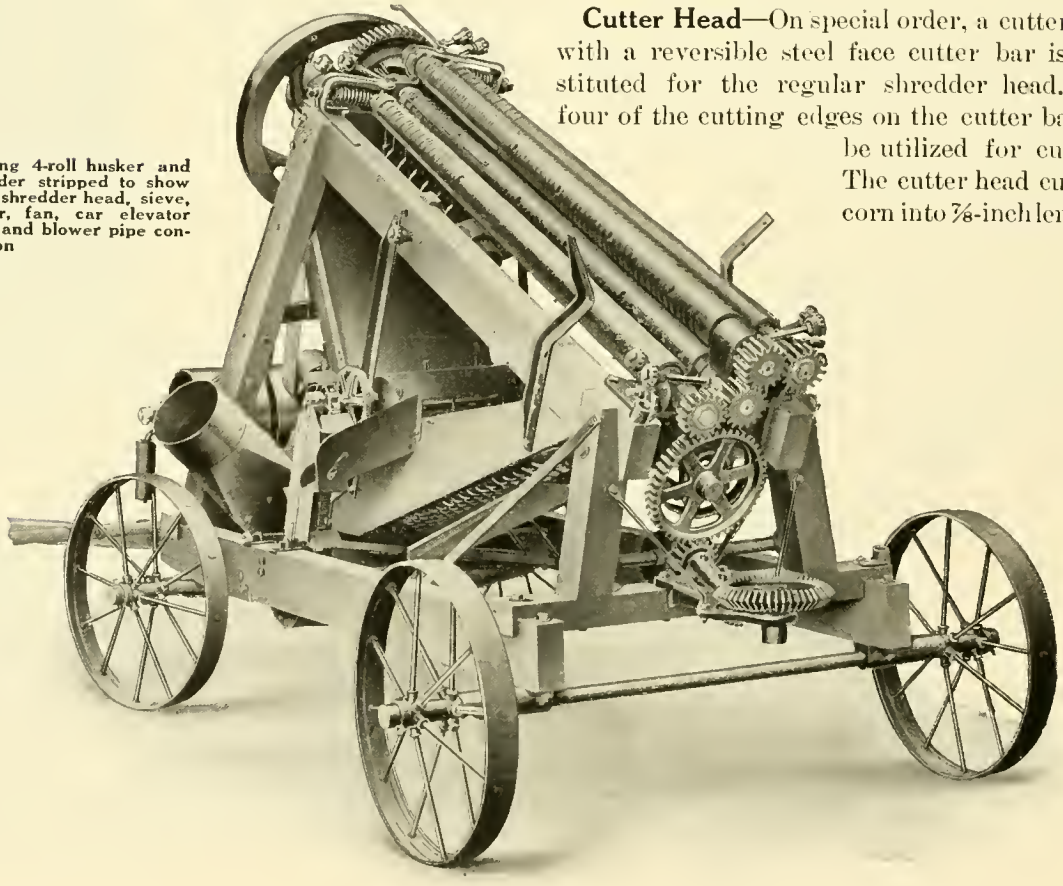


Shelled-corn elevator or sacker

# Deering 2 and 4-Roll Huskers and Shredders



Deering 4-roll husker and shredder ready for operation



Deering 4-roll husker and shredder stripped to show rolls, shredder head, sieve, beater, fan, car elevator gear, and blower pipe connection

**Cutter Head**—On special order, a cutter head with a reversible steel face cutter bar is substituted for the regular shredder head. All four of the cutting edges on the cutter bar can be utilized for cutting. The cutter head cuts the corn into ⅞-inch lengths.

# Deering 2 and 4-Roll Huskers and Shredders

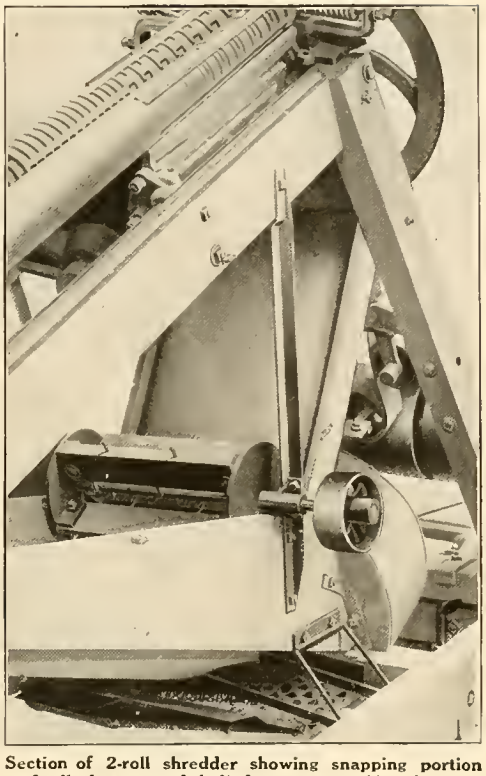
**Blower Pipe**—The blower pipe has a wide range of adjustment. It can be swung to either side of the machine, or straight up into the air if need be, which allows setting the machine close up to a barn. Three sections of pipe and one elbow, in all 18 feet of pipe, are regularly furnished with the 2 and 4-roll shredders. The blower pipe on the 2-roll has a diameter of 7 inches, while on the 4-roll it is 8 inches on account of the greater capacity.

**Capacity, Pulleys, and Power Location**—The 2-roll requires 6 to 8-horse power for operation. The capacity is 150 to 250 bushels per day. The regularly furnished pulley has a diameter of 7¼ inches with a face 8 inches wide, and a speed of 1,150 to 1,200 revolutions per minute.

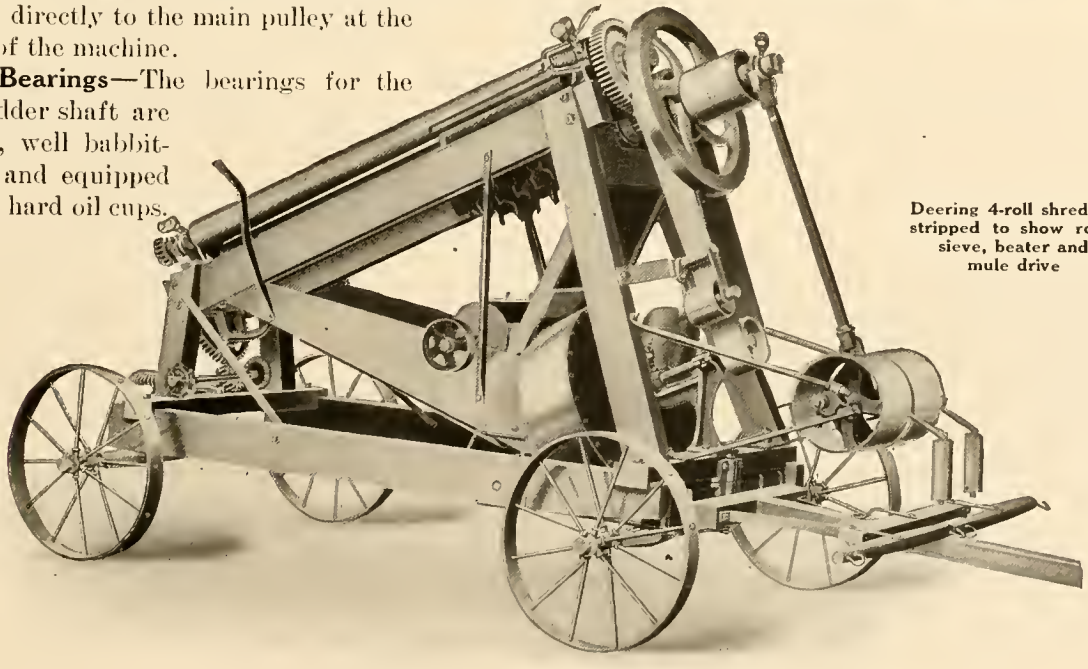
The 4-roll requires 10 to 12-horse power for operation, and has a capacity of 300 to 500 bushels per day. Pulleys and speed are the same as on the 2-roll.

The power can be located either at the side or the front end of the shredder. Two large pulleys are located just above the front axle, facing the front. When the power is located at the front of the machine, the belt runs under these two pulleys, then with a half twist up to the main pulley attached to the outer end of the shredder shaft and facing the side. When the power is located at the side, the belt runs directly to the main pulley at the top of the machine.

**Bearings**—The bearings for the shredder shaft are long, well babbitted, and equipped with hard oil cups.

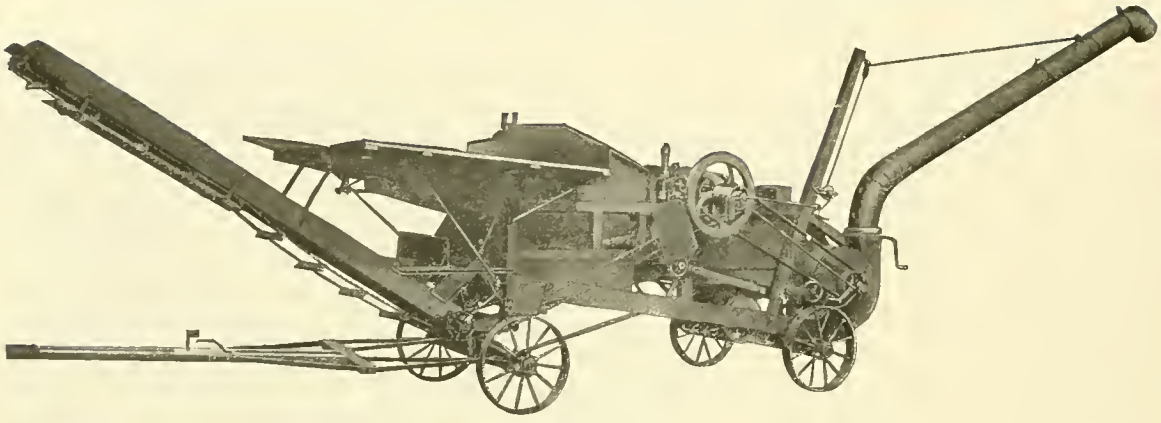


Section of 2-roll shredder showing snapping portion of rolls, beater, and shelled-corn sieve. Note heavy tension springs at top of rolls



Deering 4-roll shredder stripped to show rolls, sieve, beater and mule drive

# Deering 6-Roll Husker and Shredder



Left side of Deering 6-roll husker and shredder. Ready for operation

Right side of Deering 6-roll husker and shredder showing position of feeder

It is now generally conceded that shredded corn fodder is a very nutritious forage food. Shredded fodder goes much further than the unshredded stalk, because when the stalk is well torn to pieces it mixes with the leaves and some of it is consumed. It can also be fed to advantage in the manger where it is kept clean. It tends to keep up the flow of milk from the cows better than any kind of hay, and when fed, less grain feeds are required. When the fodder is thrown on the ground for the cattle it is largely trampled into the ground and covered with filth.

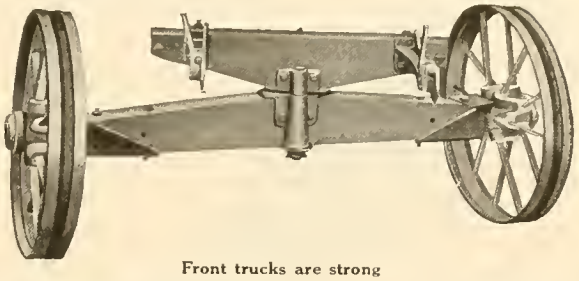
Another value added to corn fodder by shredding is that of having the refuse from the manger to bed the stock with. The shredded fodder not only makes a good bed for the stock, but it is an excellent absorbent of liquids, which it retains until spread upon the field where it makes an excellent fertilizer. When the whole stalks are found in the manure it is very annoying to handle, because the stalks hold the mass together and are very difficult to pull out from the load with a fork. The entire stalks are also not very easy to distribute with a manure spreader. The saving of labor in husking, the making of fodder more convenient to handle, the added palatability for the stock, and the value added to the manure are more than sufficient to pay for the shredding.

The Deering 6-roll husker and shredder can be placed in a very convenient form for transporting or storing. The blower pipe can be easily swung around over the machine and lowered to rest in a bracket provided for the purpose. The ear elevator can be raised to the position shown in the illustration. It is held in this position by means of a strong spring device attached to the feed table. When the elevator is raised, both the end board and foot board fold up out of the way.

The Deering 6-roll husker and shredder is a self-feed machine, designed and built for the extensive corn grower and custom shredderman. Its great capacity and excellent showing, even under the worst conditions of corn, have proved beyond a doubt that the Deering 6-roll husker and shredder is an ideal machine to use in large shredding operations.

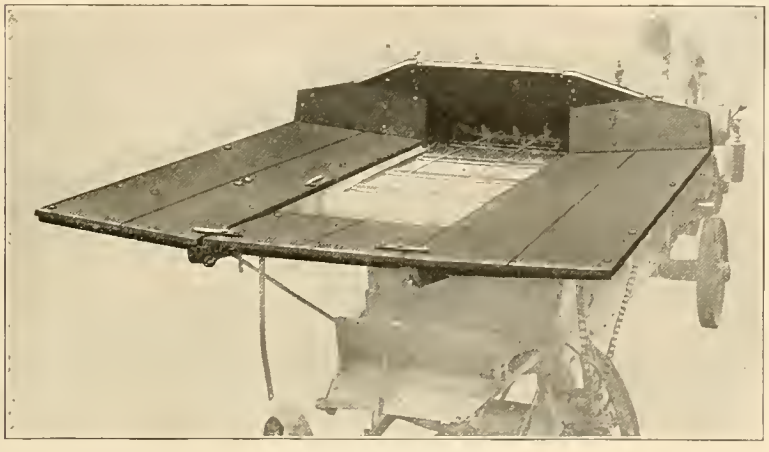
# Deering 6-Roll Husker and Shredder

**Main Frame and Trucks**—The frame is exceptionally substantial. It is of selected and thoroughly seasoned hardwood, and is strongly bolted and braced to insure as rigid a foundation as it is possible to provide for a machine of this kind. The shredder can therefore be worked to its utmost capacity without straining the frame or bearings. The machine can be easily hauled over country roads by two horses.



Front trucks are strong

The trucks are wide and have extra strong hardwood axles. The wheels have a diameter of 26 inches and tires 4 inches wide. The wheels are strengthened by having the spokes set staggered. The machine is set low on the trucks, which results in a better balance and reduces vibration to a minimum.



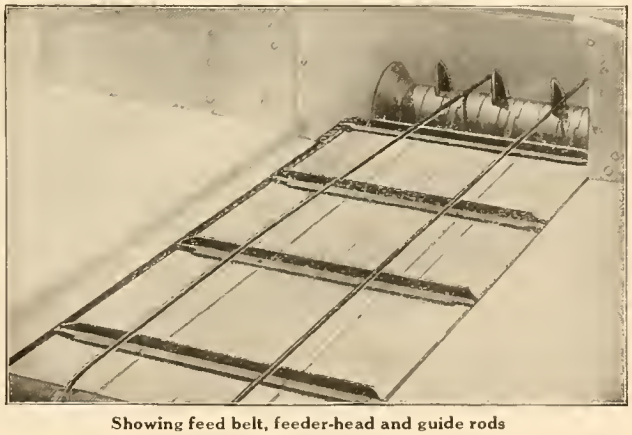
The feed table is large

**Feed Table**—The stalks can be thrown on the large and roomy feed table from either or both sides of the shredder. When the stalks are pitched from only one side, a stalk guide is provided to use on the half of the feed table opposite the pitcher, which prevents the stalks from being thrown over too far.

**Feeder's Stand, Feed Belt, Feeder-head, and Gear Shifter Lever**—The feeder's stand is located about three feet above the ground between the two halves of the feed table, and six feet back from the feed opening. It is therefore impossible for the feeder to come in contact with the snapping rolls in the feed opening. He is prevented from coming in contact with the feeder-chain, angle-iron cross slats at the end of the feed table by a protecting, sheet-steel shield, and his feet are protected from the husking rolls by a strong, wide board placed on edge and held securely by bolts and two steel straps. The feeder chains at the sides of the feeding platform are covered.

**Safety**—The Deering 6-roll husker and shredder is as safe as it can be made. Accidents can be forestalled in every instance if proper precautions are taken, and they can generally be traced to ignorance or careless tampering with the interior parts while the machine is working.

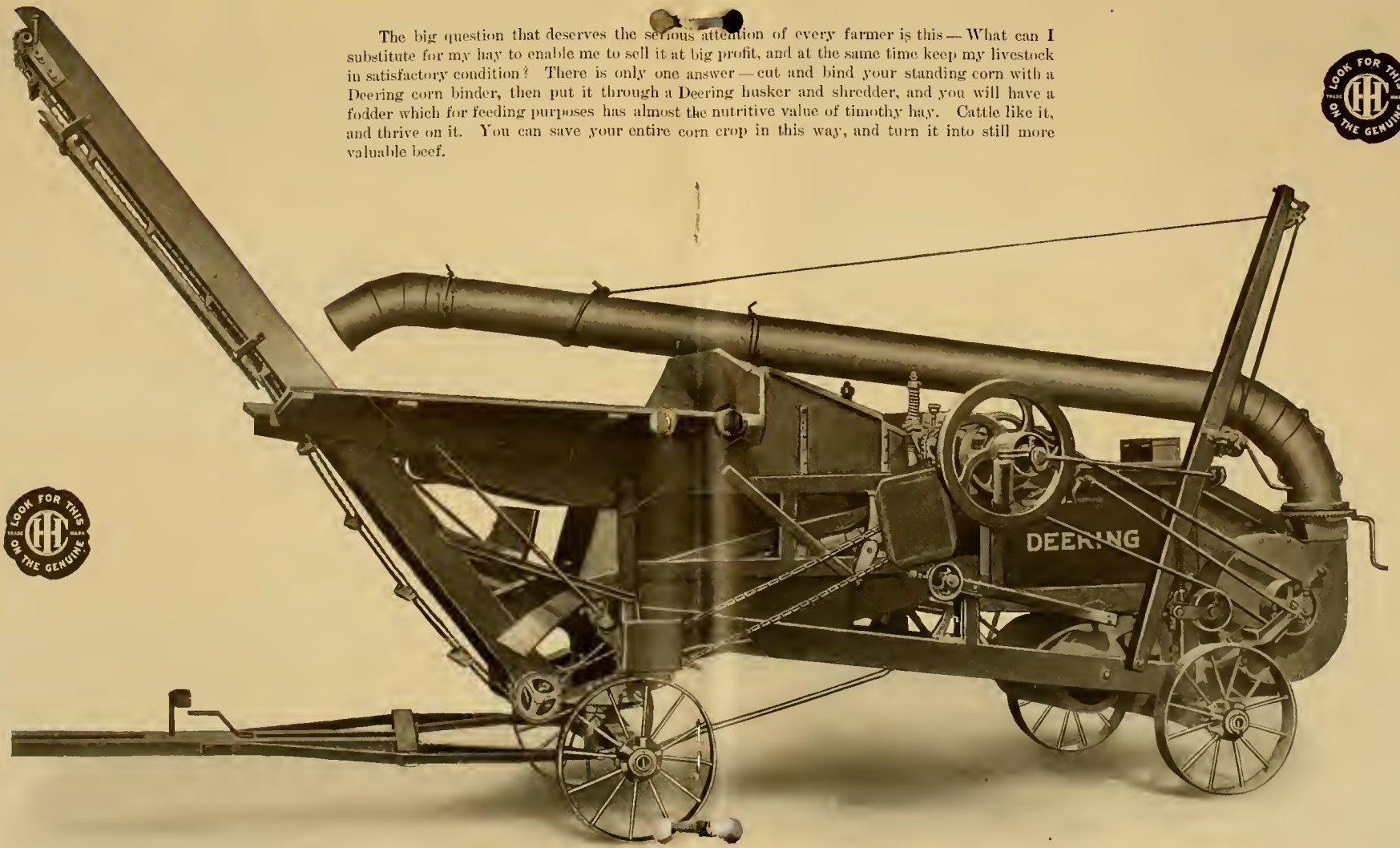
The feed table inclines toward the feed opening, also from the sides toward the feed belt and feeder, which eases the work of feeding considerably. The corn is carried into the feed opening to the feeder-head by endless chains and angle-steel cross slats. All that is necessary in feeding the machine is to spread the stalks on the feed belt.



Showing feed belt, feeder-head and guide rods

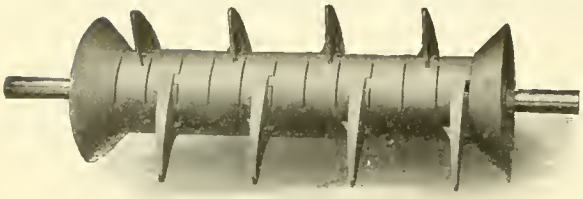
# A Machine for the Corn Grower, Stock Raiser and Dairyman

The big question that deserves the serious attention of every farmer is this — What can I substitute for my hay to enable me to sell it at big profit, and at the same time keep my livestock in satisfactory condition? There is only one answer — cut and bind your standing corn with a Deering corn binder, then put it through a Deering husker and shredder, and you will have a fodder which for feeding purposes has almost the nutritive value of timothy hay. Cattle like it, and thrive on it. You can save your entire corn crop in this way, and turn it into still more valuable beef.




A Deering 6-roll husker and shredder folded for transportation

# Deering 6-Roll Husker and Shredder

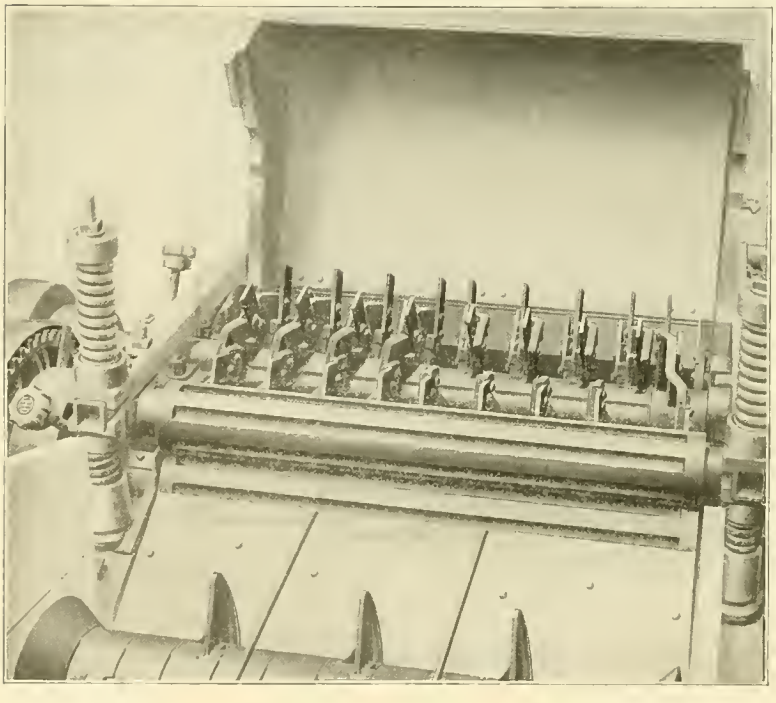


Feeder head

The feeder head distributes the stalks and leaves evenly to the snapping rolls. The guide rods assist the short corn into the snapping rolls. Just above the snapping rolls is a circular hood held in position by springs. This hood guides the stalks into the snapping rolls and tends to hold back the upper stalks when large bundles are fed, thus making a more even feed. The feeder has absolute control over the machine at all times. Should something go wrong with the machine, he can stop it instantly by means of the gear shifter lever, or rod, which is very conveniently located at the feeder's left hand immediately under the edge of the feed table, where it does not interfere with the handling of the corn.

**Snapping Rolls**—Thoroughly efficient snapping rolls are absolutely necessary as the capacity of the husker and shredder is regulated by these rolls. The Deering snapping rolls are adjustable for all conditions of corn, simply by loosening the tightener for the snapping roll chain, and turning the top roll to the desired position. When stalks are large and frozen, the bars on the roll may be set opposite each other; but in ordinary work, a bar or flat surface is generally set opposite a groove. No matter whether the stalks are being fed in large or small quantities, the ears are snapped with equal facility. This is due in part to the efficiency of the spring adjustment which holds the upper snapping roll down close to its work. The upper roll is self-adjusting up and down. Cushion springs prevent pounding and possible breakage of the rolls when the machine is running empty. The snapping rolls have a length of 26 inches and a diameter of 3½ inches.

Snapping roll

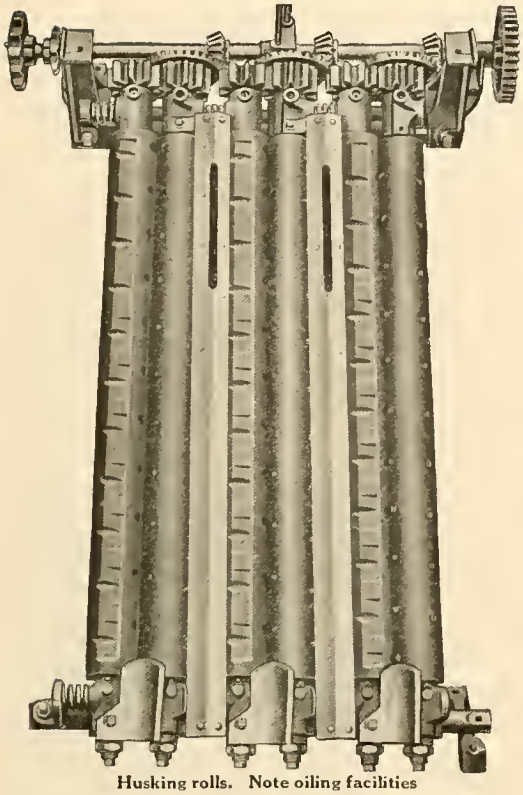


Shows how corn enters shredder. Note the powerful snapping rolls and shredder head, also the springs which adjust the rolls to different size corn

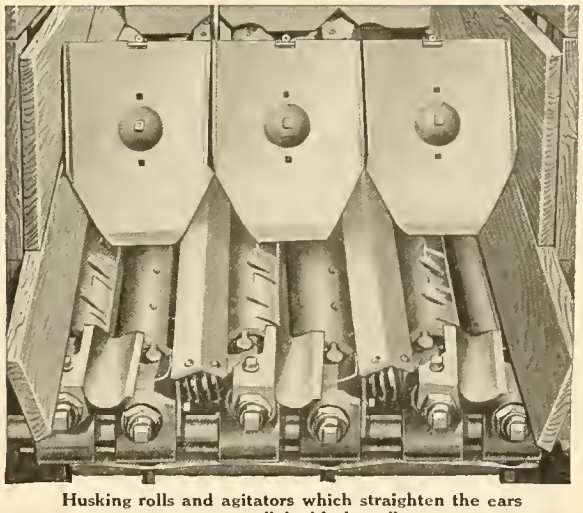
**Shredder Head**—Particular attention is called to the shredder head. The Deering shredder head is made up of steel blades placed so that no two blades follow each other. It tears the pith out of the stalks to a great extent and breaks all joints, in which lies the food value of the stalks. There are no knives to keep sharp, and winding is absolutely prevented. The shredder head has long and wide bearings, well babbitted. The shredder head shaft is large in diameter, and is made of cold rolled steel.

**Cutter Head**—On special order a cutter head, with a reversible, steel face cutter bar is substituted for the regularshredder head. All four of the cutting edges on the cutter bar can be utilized for cutting. The cutter head cuts the corn into 1⅞-inch lengths.

# Deering 6-Roll Husker and Shredder



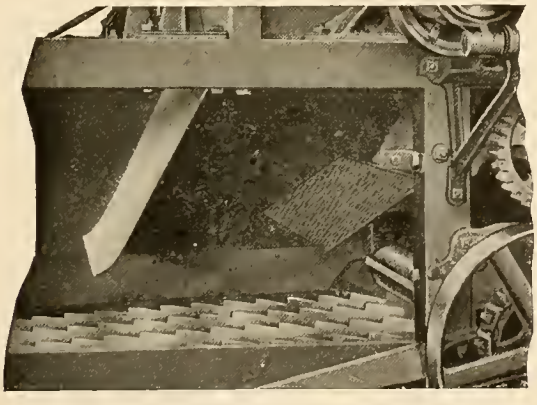
Husking rolls. Note oiling facilities



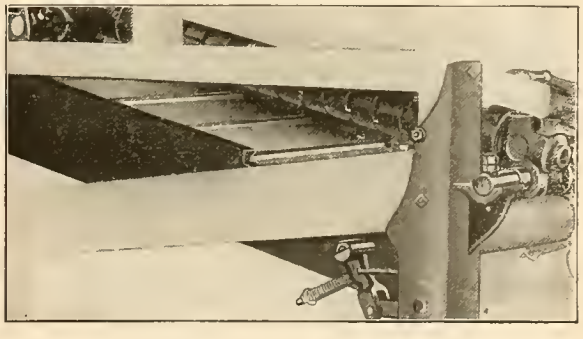
Husking rolls and agitators which straighten the ears parallel with the rolls

**Husking Rolls**—The husking rolls on the Deering 6-roll husker and shredder are exceptionally well designed and equipped to do their work properly. The construction of the husking rolls should always be taken into consideration before buying a shredder. They are vitally important.

On the Deering 6-roll shredder the husking rolls are aggressive and have sufficient capacity to handle all the corn which can be fed into the machine and do the best work. The husking rolls are provided with grooves which permit the shelled corn to pass through between the rolls without being crushed. Small screw projections are used on these rolls to aid in stripping the husks from the ears. The agitators over the husking rolls keep the ears parallel to the rolls and hold the leaves and trash at the upper end of the rolls until they are caught and pulled down to the husk canvas, which is kept taut by a spring tightener. The short stalks are turned and pass down through the rolls, consequently no trash can get to the wagon with the ears. The small quantity of corn that is shelled, and the husks, pass through the rolls to the canvas belt beneath, which carries them back to the sieve. From this point the husks are moved forward to the blower, while the shelled corn passes through the cleaning device and over the cleaning fan, then to the shelled corn spout. The length of the husking rolls is 45 inches, the diameter is 4 inches.

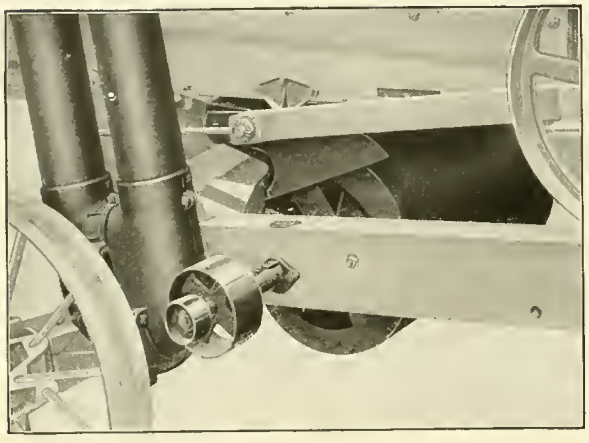


Front end of shelled-corn cleaning device, showing sheet-steel retarder and grate



Husk canvas and spring tightener box

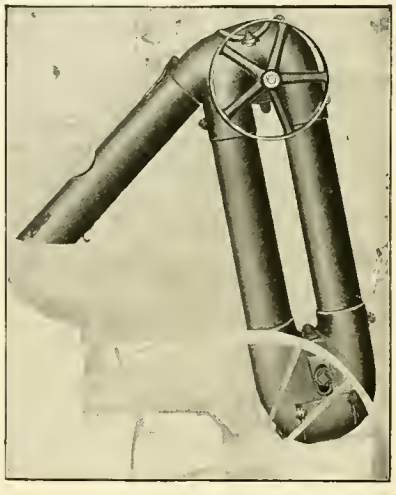
# Deering 6-Roll Husker and Shredder



Cleaning fan for shelled-corn sieve

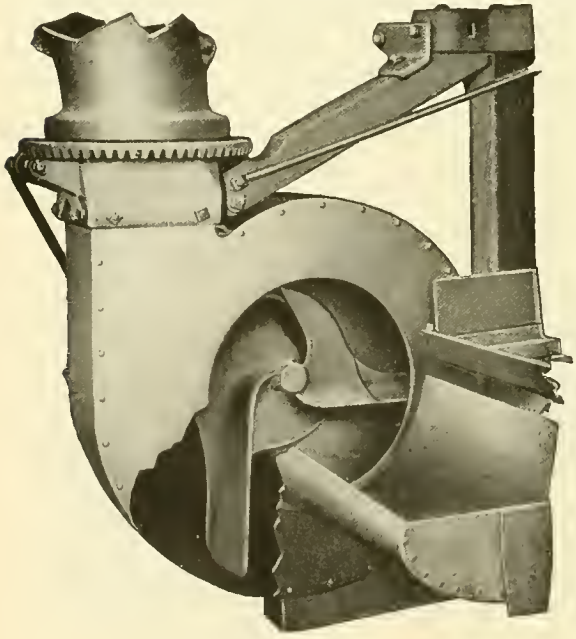
**Shelled Corn Is Not Wasted**—Practically all of the shelled corn is separated from the stover in the Deering 6-roll shredder when the stover is forced down from the shredder head to the shelled-corn grating of the shaker.

A large sheet-steel check flap prevents the stover from being carried too far back onto the sieve. All of the stover is forced down to the front end of the sieve so that thorough separation of the shelled corn is sure to take place. The sieve is constantly agitated and keeps the stover moving continuously towards the fodder guide which carries it to the blower. Four metal fishbacks are used on the sieve to aid in the movement of the stover. The shelled corn falls through the sieve to a screen below, which is also kept in constant motion. As the shelled corn falls upon the sieve the weed seeds, dirt, and sand that have been brought into the machine on the stalks fall through the screen to the ground. As the stover reaches the rear end of the sieve it is moved to the fodder guide, then to the blower fan. The shelled corn is all forced toward the rear end of the screen to the shelled-corn spout, which conveys it to the shelled-corn elevator. A sheet-steel retarder at the rear of the sieve prevents the shelled corn from being drawn into the blower.



Shelled-corn elevator

**Cleaning Fan**—The fan used in connection with the cleaning is a combined screw and blade fan which gives a large volume of air at a low pressure for cleaning. It forces the stover to the guide and cleans the shelled corn as it falls from the end of the screen to the shelled-corn spout. Practically all of the shelled corn is saved and placed in the sack. The shelled-corn spout is at the rear of the cleaning sieve. It is attached to the side of the fodder guide, and is operated by the same crank arm that gives the guide its lateral motion. Each end of the fan has a ventilator for adjusting the volume of the blast.



The blower fan has a large capacity

**Blower Fan**—The blower fan is exceptionally large and powerful, and there is ample space around it so that large quantities of shredded fodder can be handled very rapidly. The rapidity with which it revolves prevents clogging or choking. All of the fodder is fed uniformly to the fan, giving plenty of time for the fan to thoroughly clean itself. The fan is a one-piece malleable casting, consequently there are no bolts or rivets to get loose and cause trouble.

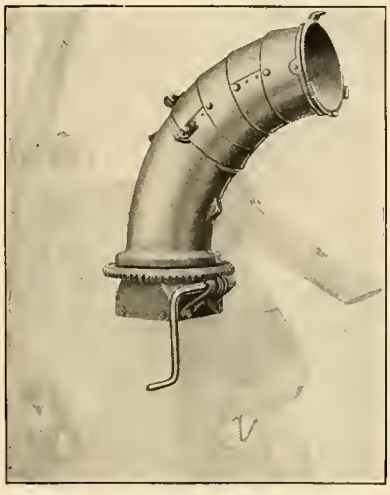
# Deering 6-Roll Husker and Shredder

**In-and-Out-of-Gear Clutch**—The in-and-out-of-gear clutch on the Deering husker and shredder is positive in its action. It has a specially designed expanding ring made of metal. A steel lever, operated by a sliding cone on the drive shaft, expands the clutch ring. The clutch acts quickly, and releases promptly. A set screw and check nut on the steel lever provide an easy way for taking up wear.

**Gears**—The teeth of all the gears are made strong and have wide wearing surfaces. They are amply protected from trash.

**Oiling Facilities**—Hard oil cups are used on all bearings doing heavy work. All bearings are well babbitted to take up wear.

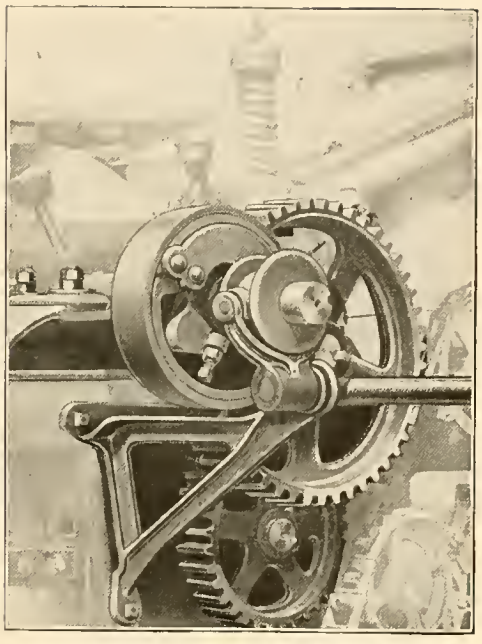
**Blower Pipe**—The blower pipe is raised or lowered by means of an easy-working windlass on the boom which is bolted to the rear end of the shredder frame. A worm gear at the base of the blower pipe enables the operator to swing the pipe to the right or to the left for building the stack or directing the course of the fodder into the mow. Three pipe sections and one elbow, in all 18 feet of blower pipe, are regularly furnished. The end of the spout can be put through an opening 22 feet from the ground. The diameter of the pipe is 9 inches. During transportation the pipe can be folded back over the machine and dropped to the pipe rest provided for this purpose.



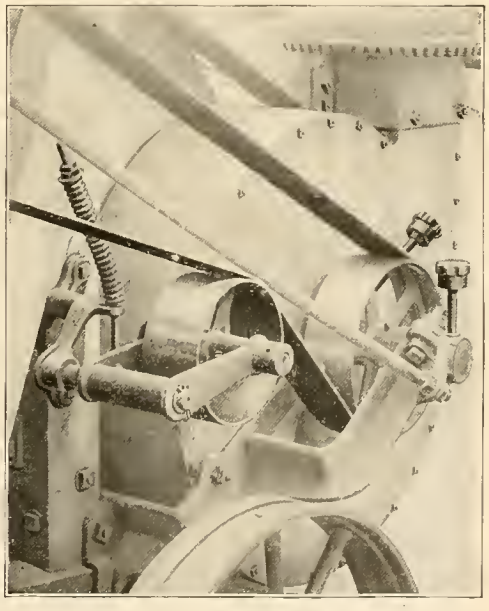
The above illustrations show the extremes to which the blower pipe can be raised or lowered

**Pulley, Power, Speed, and Capacity**—The drive pulley furnished regularly has a diameter of 7¼ inches and a face 8 inches wide. The speed at which the machine should be run to secure the best results is 1,200 revolutions of the shredder head per minute. Fifteen to twenty-horse power are required for operation.

The average capacity is 600 bushels per day.



Rear view of in-and-out-of-gear clutch



Blower belt tightener

# Why Not Save the Whole Corn Crop?

With the advent of high prices and scarce and unreliable help, it is absolutely necessary to make every minute count. In many sections time is saved by several farmers banding together and buying a husker and shredder in partnership. Where this method is practiced, the machine is started early in the fall and is never allowed to remain idle until all the partners have their corn safely under cover. By resorting to the exchange of help plan, the cost of husking is reduced to practically nothing. It often happens that after figuring the cost of husking corn at the old rate, the new method—husking with the shredder—leaves the shredded fodder as clear gain.

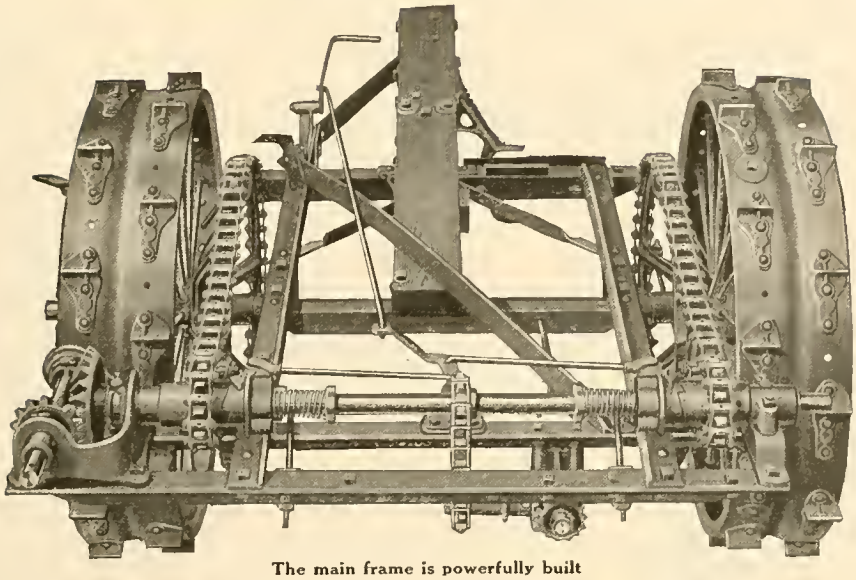
As the average yield of corn stover is slightly over two tons per acre, it can be seen that it takes but two to three acres of corn to produce sufficient roughage to take the place of an acre of hay, and in addition produce the ears. If the corn fodder had been shredded it would have been more valuable, as experiments have shown that shredding increases the value of the corn stover twenty to twenty-five per cent.

Exhaustive experiments have proved that about forty per cent of the nutritive value of the corn plant and ears is in the stalk and leaves. Stop and think. Can you well afford to waste forty per cent of the crop which you have worked so hard to prepare? Yet think of the acres where the corn is left standing every year after the ears have been picked. Such a system spells loss in big letters for the farmer, and cuts down the total value of his annual corn crop.

It takes work and lots of it to raise a corn and hay crop. Of course, that is to be expected and is all right, providing you get out of these crops all there is in them. But when it comes to losing money on both, it is time to do a little thinking and figuring.

The Deering 6-roll husker and shredder is an ideal machine for its purpose

# Deering No. 3 Corn Picker

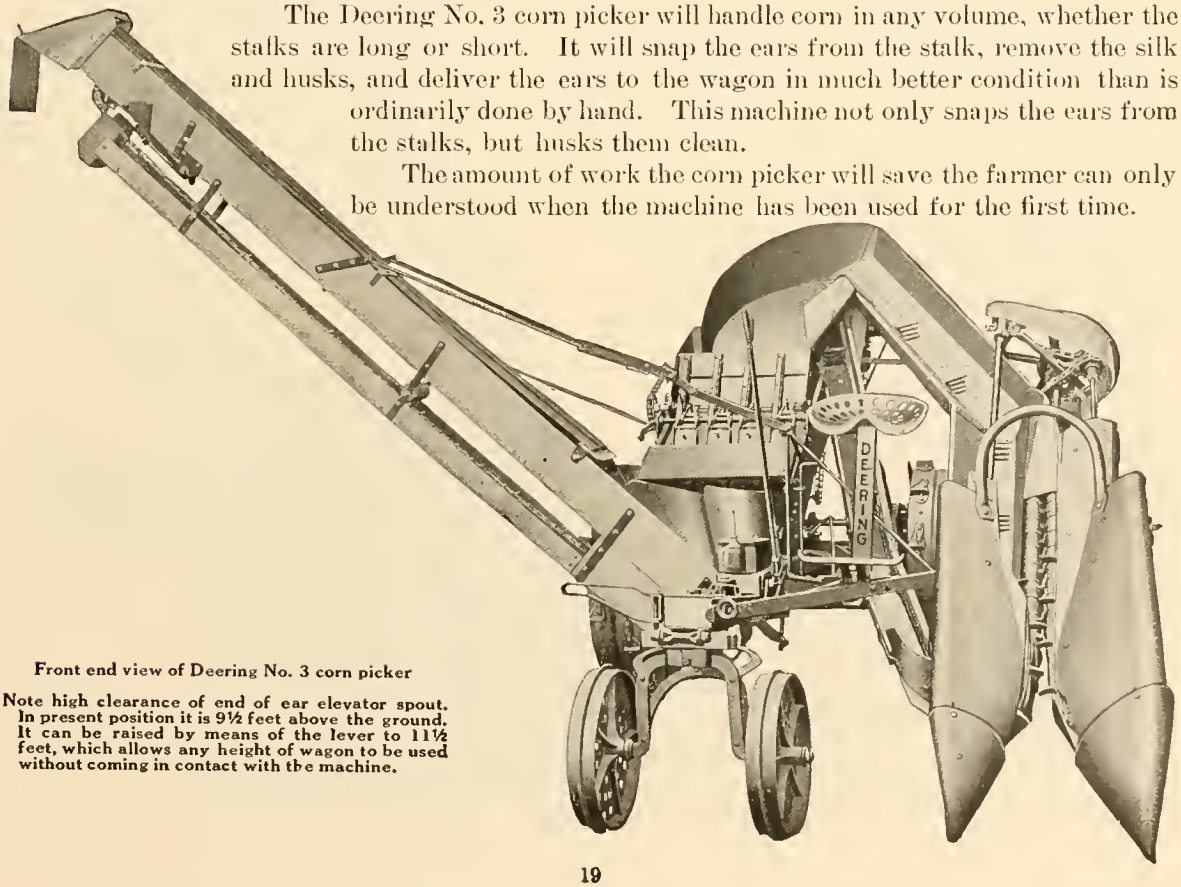


The main frame is powerfully built

Like the reaper and harvester, the Deering corn picker was at first considered impractical; but it is now considered a necessity.

The Deering No. 3 corn picker will handle corn in any volume, whether the stalks are long or short. It will snap the ears from the stalk, remove the silk and husks, and deliver the ears to the wagon in much better condition than is ordinarily done by hand. This machine not only snaps the ears from the stalks, but husks them clean.

The amount of work the corn picker will save the farmer can only be understood when the machine has been used for the first time.



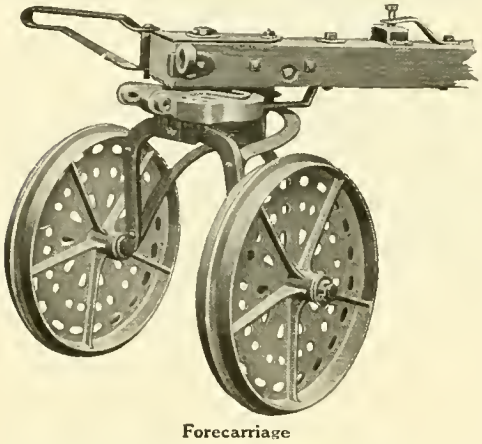

Front end view of Deering No. 3 corn picker

Note high clearance of end of ear elevator spout. In present position it is 9½ feet above the ground. It can be raised by means of the lever to 11½ feet, which allows any height of wagon to be used without coming in contact with the machine.

# Deering No. 3 Corn Picker

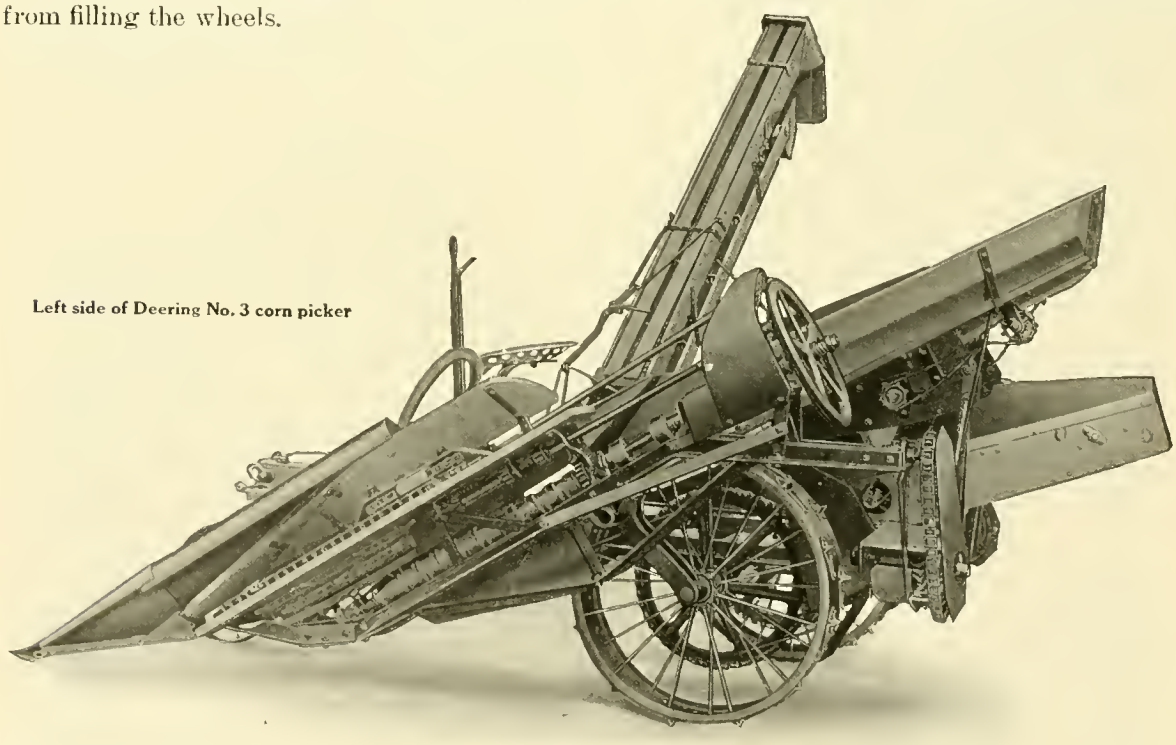
**A Generous Capacity as Compared with the Hand Picker**—The corn picker works as fast as the horses walk, averaging 4 to 7 acres per day under fair conditions. When a corn picker is used, all the hard and disagreeable work is done by the machine. All the driver has to do is to guide the horses and adjust the machine to different conditions of corn.

**Main Frame and Wheels**—As can be seen in the illustration on the foregoing page, the main frame of the Deering No. 3 corn picker is of angle iron. It is substantially braced. The main and cross sills are secured by heavy bolts. An additional reinforcement is provided by a heavy angle iron diagonal. The frame easily carries the weight of the machine and has rigidity enough to withstand the many strains to which it is subjected, without wrenching or sagging. The wheels are 37 inches high, with tires 9 inches wide. A depression in the center of the tire reacts against torsional strains and helps the wheels to clean themselves. The wheels are provided with powerful lugs to increase traction.



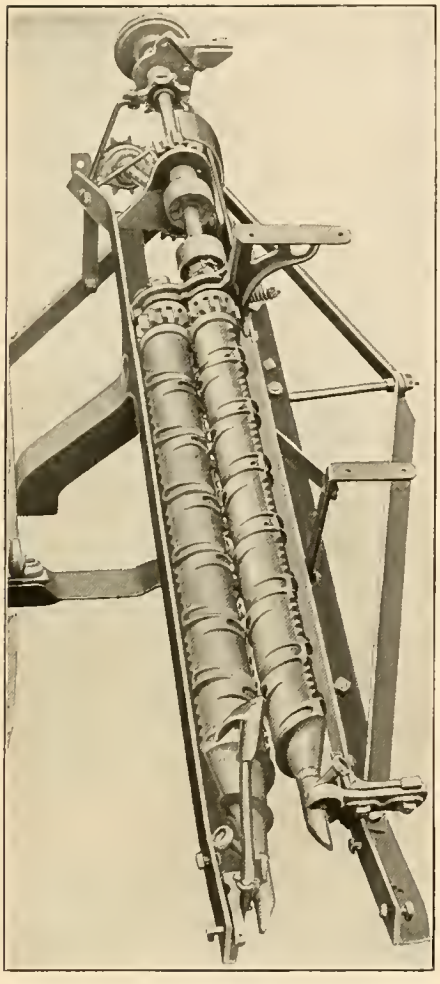
Forecarriage

**Forecarriage**—The machine is provided with a forecarriage which prevents whipping of the tongue, causes the machine to ride smoothly over rough ground, and holds the divider boards steady. The forecarriage also eliminates neck weight on the horses. The wheels have a diameter of 19 inches and a tire 3½ inches wide. A center rib on the tire, ⅝ of an inch high, reduces side draft and makes turning of corners easier. The wheels are webbed to prevent corn trash from filling the wheels.

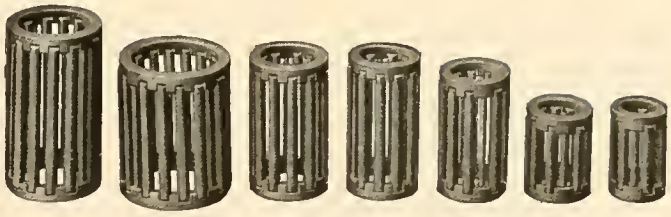


Left side of Deering No. 3 corn picker

# Deering No. 3 Corn Picker



Snapping rolls



Showing different sizes of roller bearing cages

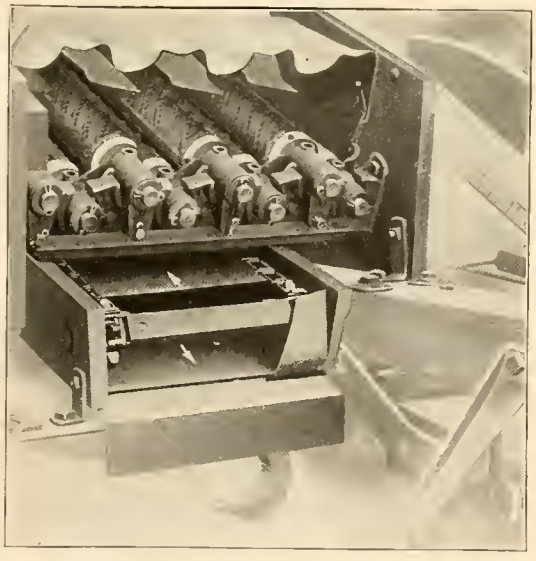
**Roller Bearings**—The Deering No. 3 corn picker has 37 roller bearings of different sizes, which accounts for its comparatively light draft. They are found at the following points on the machine—main wheel has four; main shaft, two; main bracket shaft, two; snapping roll drive shaft, two; fly-wheel shaft, two; upper end snapping roll, two; wagon ear-elevator drive, two; upper and lower ends husking rolls, sixteen; wagon ear elevator, two; husking roll drive shaft, one; fan and husk conveyor drive shaft, one; and first elevator idler roller, one.

All bearing boxes are self-aligning to prevent binding or cramping.

**Picker Shields**—The gathering boards are covered with sheet iron shields, in two sections, to reduce wear. The lower shield overlaps the upper shield and by means of a slot and bolt, by which the lower shield is hung on the upper shield, the picker shoes have a play up and down of 8 inches, which is an advantage in rough ground. The shoes adjust themselves automatically when they happen to strike a big stone or clod.

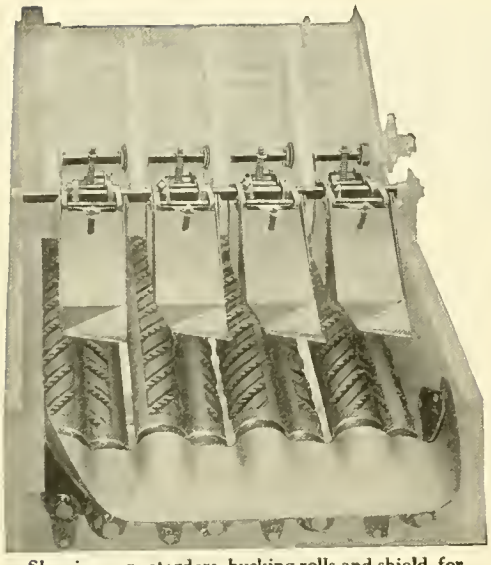
**Snapping Rolls**—The snapping rolls are of different lengths, the inner being 40 inches long and the outer 37 inches. The outer roll is hung higher and the picker board immediately over it is placed at such an angle that when the ears are snapped they naturally fall into the first elevator, to be carried to the husking rolls. The rolls are corrugated to enable them to get a firm grip on the stalks while the ears are being snapped off. At the lower ends of the snapping rolls there are adjustments for automatically spacing the rolls for different sizes of corn. A large balance wheel at the upper end of snapping rolls materially reduces draft.

**First Elevator**—The endless chain on the first elevator is equipped with metal fingers or lug links, which force the corn to the top of the elevator from the snapping rolls. They travel in a V-shaped flat bottom trough, 4 inches wide at the bottom.



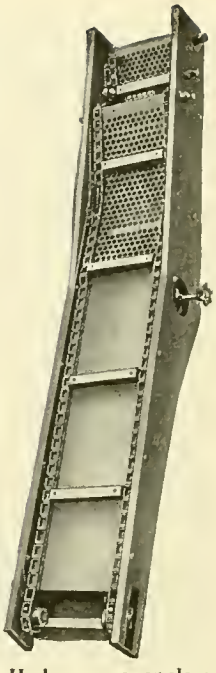
Showing ends of husking rolls, oil holes, the protecting shield which covers the oil holes raised, and the elevator brackets. The top arrow indicates direction of husks after passing through the husking rolls. Lower arrow shows where shelled corn enters the ear elevator

# Deering No. 3 Corn Picker



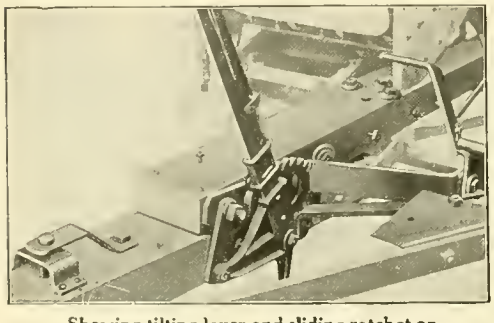
Showing ear retarders, husking rolls and shield, for protecting bearings and oil holes, in place

**Husking Rolls**—There are eight husking rolls three feet long, with a diameter of $2\frac{11}{16}$ inches. They are set in pairs, each roll having notched spiral ribs. The companion roll, which is set lower, is equipped with raised shoulders and husking pins. The husking pins and shoulders on the lower roll work opposite the space between the spirals on the upper roll. This arrangement results in giving a better hold on the husks. Oscillating ear retarders prevent the corn from slipping over the rolls before the husks have been removed. When husked clean the ears drop down into the wagon ear elevator and are carried up to the wagon. Springs on each side of the husking rolls hold them to their work and insure clean husking. Should any hard substance get into the rolls, these springs allow the rolls to adjust themselves automatically to prevent breaking. Each roll bearing box has oil holes, well protected by metal shields.

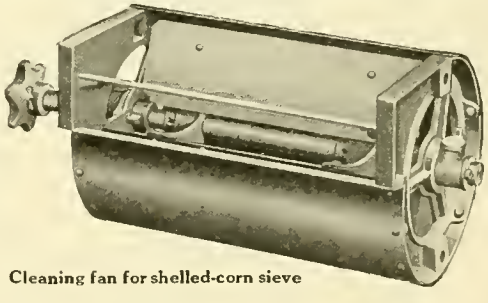


Husk conveyor or elevator. Note shelled-corn sieve at upper end

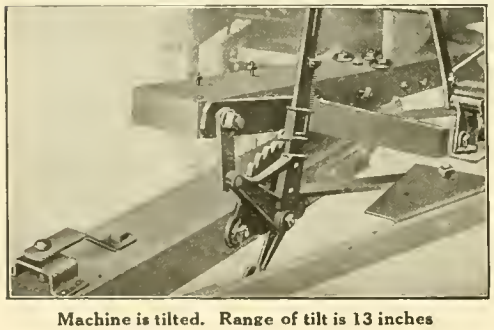
**Husk Conveyor and Shelled-Corn Sieve**—After passing through the husking rolls, the husks and shelled corn, if any, fall to the husk conveyor, which drops the husks and refuse to the ground at the rear of the machine. The shelled corn is acted on by a cleaning fan and falls through the shelled-corn screen or sieve to be carried forward to the ear elevator, which carries it to the wagon.



Showing tilting lever and sliding ratchet on quadrant. Not tilted



Cleaning fan for shelled-corn sieve

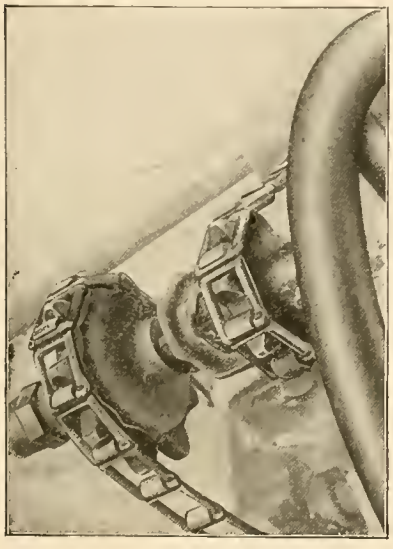


Machine is tilted. Range of tilt is 13 inches

**Wagon Ear Elevator**—In its natural position the wagon ear elevator spout is 9½ feet above the ground. By means of a raising lever it can be raised 2 feet more, which allows ample clearance for any wagon to pass under. The flap at the top of the spout is very efficacious in preventing corn from being thrown over too far so as to miss the wagon box. This elevator can be stopped independently of the machine by means of a clutch shifter lever, and the machine can therefore be operated to the end of the row and while the machine is being turned, without corn dropping on the ground.

# Deering No. 3 Corn Picker

**Levers**—The picker tilting lever, wagon ear-elevator gear-shifter lever, main gear shifter lever, and wagon ear-elevator raising and lowering lever are all conveniently placed near the driver's feet or within easy reach of his hands. The picker tilting lever has a sliding ratchet on the quadrant, making it an easy matter to tilt the machine simply by pulling back on the lever without gripping it.



Friction clutch

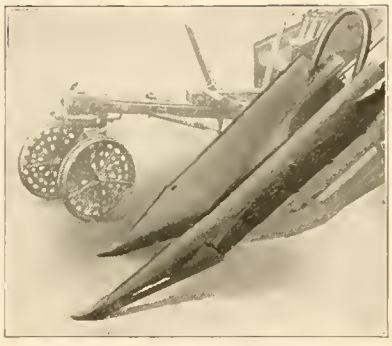
**The Shoes and Gatherer Boards are Protected from Injury**—When the picker is working in rough fields the shoes and gatherer boards are amply protected against breakage. The shoes automatically adjust themselves to the inequalities of the ground surface. It would be impossible to get good service from the corn picker if the gathering parts had a solid or rigid construction.

A big advantage of the loosely hanging shoes is that they are enabled to pick up down corn stalks in a very satisfactory manner. The farmer can therefore be assured of saving all the ears when he uses a Deering No. 3 corn picker.

**Safety Friction Clutch and Chain Tightener**—There are three safety friction clutches to insure safety to the gatherer chains, the first elevator and the wagon ear elevator. These friction clutches allow these parts to stop working while the rest of the machine is in operation, should any foreign substance get into the machinery of these parts.

All chains are provided with tighteners to take up slack.

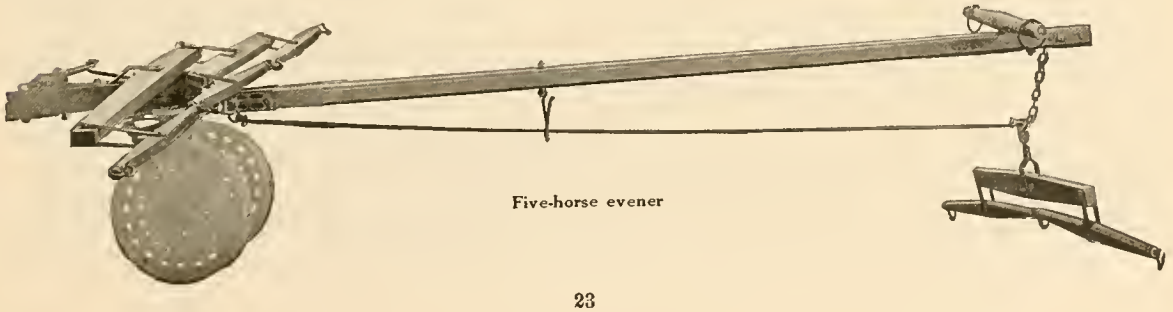
**Evener**—A 5-horse evener is regularly furnished with the machine. It can be easily changed to a 4-horse evener.



Machine not tilted. Shoes on ground

Machine not tilted. Showing how shoes clear the ground when striking hard lumps. Shoes clear ground by 8 inches

When the machine is tilted the shoes clear the ground by 13 inches



Five-horse evener

# The Corn Picker a Necessity on the Modern Farm

The emancipation of the farmer from the sickle with which the wheat crops of the world were cut in the past was the result of the introduction of the reaper and binder. In a like manner it rests with the farmer whether or not he will free himself from the husking pin—the instrument of torture to many an ambitious farmer boy. This has been made possible by the placing on the market of the corn picker.

The Deering No. 3 corn picker is a good example of what is being done to relieve the farmer of the hard labor which has been his portion since the beginning of agriculture. His work is less complicated and takes less time than ever before in the world's history.

# A Problem Solved

One of the great problems, however, which confronts the corn grower annually is the scarcity of help to harvest the corn crop. This is true today more than ever before. The immensity of this problem becomes apparent when we glance at the array of figures it takes to specify the number of bushels of corn harvested in 1912—3,124,746,000 bushels—an average of 34⅔ bushels for every man, woman and child in the United States. To bring the point home still closer—if every man, woman, and child in the United States, irrespective of age or strength, had been employed in picking this corn from the stalks in the field, it would have meant one eight-hour day of labor for each individual.

The back-breaking labor required to harvest this immense crop can be avoided by using the Deering corn picker. This machine has a capacity of from four to seven acres under ordinary conditions, and has been known to pick as much as ten acres a day when picking long rows under very favorable conditions. The whole operation can be attended to by several men, one man to drive the horses and guide the corn picker, and one, or as many men as are necessary to drive the wagons which receive the ears from the elevator and haul them away to the barn.

**The Deering No. 3 corn picker does excellent work in all conditions of corn**

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